

SELECTED PUBLICATIONS AND WEB SITES

In addition to these publications and web sites, a list of wildlife field guides and reference books is provided at the end of Chapter 7. Also, a list of publications on wildlife control techniques by the U.S. Department of Agriculture, National Wildlife Research Center, is provided in Appendix K.

Belant, J. L., S. K. Ickes, and T. W. Seamans. 1998. Importance of landfills to urban-nesting herring and ring-billed gulls. *Landscape and Urban Planning* 43:11-19.

Bellrose, F. C. 1980. Ducks, geese, and swans of North America, third edition. Stackpole Books, Harrisburg, PA. 540 pages.

Blokpoel, H. 1974. Bird hazards to aircraft. Canadian Wildlife Service. Ministry of Supply and Services, Ottawa, Ontario, Canada. 236 pages.

Blokpoel, H., and, G. D. Tessier. 1984. Overhead wires and monofilament lines exclude ring-billed gulls from public places. *Wildlife Society Bulletin* 12:55-53

Cleary, E. C., S. E. Wright and R. A. Dolbeer. 1999. Wildlife strikes to civil aircraft in the United States, 1990-1998. Federal Aviation Administration, Office of Airport Safety and Standards, Washington, DC. 29 pages.

Code of Federal Regulations:

National Archives and Records Administration. 1993. Code of Federal Regulations, Title 40, Part 253, Criteria for Municipal Solid Waste Landfills, section 253.10, Airport Safety. Washington, DC.

National Archives and Records Administration. 1994. Code of Federal Regulations, Title 50, Parts 1-199, Wildlife and Fisheries, Washington, DC. 615 pages.

National Archives and Records Administration. 1993. Code of Federal Regulations, Title 14, Part 139, Certification and Operation: Land Airports Serving CAB-Certificated Scheduled Air Carriers Operating Large Aircraft (Other Than Helicopters), Washington, DC. 93 pages.

Dolbeer, R. A., J. L. Belant, and J. L. Sillings. 1993. Shooting gulls reduces strikes with aircraft at John F. Kennedy International Airport. *Wildlife Society Bulletin* 21:442-450.

Dunning, J. B. Jr., editor. 1993. CRC Handbook of Avian Body Masses. CRC Press, Boca Raton, Florida. 371 pages. (Body weights for birds throughout the world)

Gill, F. B. 1990. Ornithology. W. H. Freeman and Company. New York. 660 pages.

- Hygnstrom, S. C., R. M. Timm, and G. E. Larson, *editors*. 1994. *Prevention and control of wildlife damage*. University of Nebraska Cooperative Extension Division, Lincoln, NE. (This 2-volume manual is also available online at : ianrwww.unl.edu/wildlife/solutions/handbook/)
- Knittle, C. E., and R. D. Porter, 1993. Waterfowl damage and control methods in ripening grain: an overview. U.S. Fish and Wildlife Service, Fish and Wildlife Technical Report 14, Washington, DC. 17 pages.
- Linnel, M. A., M. R. Conover, and T. J. Ohashi. 1999. Biases in bird strike statistics based on pilot reports. *Journal of Wildlife Management* 63:997-1003.
- Seubert, J. L. 1994. Assessing the implementation of wildlife hazard management programs at civil airports. *Proceedings Bird Strike Committee Europe* 22:275-284.
- Smith, A. E., S. R. Craven, and P. D. Curtis. 1999. Managing Canada geese in urban environments. Jack Berryman Institute Publication 16, and Cornell Cooperative Extension, Ithaca, NY.
- Transport Canada, Airports Group. 1994. *Wildlife Control Procedures Manual*. TP11500E. Ottawa, Ontario.
- Wright, S. E., R. A. Dolbeer, and A. J. Montoney. 1993. Deer on airports: an accident waiting to happen. *Vertebrate Pest Conference* 13:90-95.

Web Sites:

Bird Strike Committee USA. [**www.birdstrike.org/**](http://www.birdstrike.org/)

Prevention and control of wildlife damage (2-volume manual). University of Nebraska Cooperative Extension Division, Lincoln, NE.
[**ianrwww.unl.edu/wildlife/solutions/handbook/**](http://ianrwww.unl.edu/wildlife/solutions/handbook/)

Transport Canada, Airports Group. *Wildlife Control Procedures Manual*.
[**www.tc.gc.ca/aviation/wildlife**](http://www.tc.gc.ca/aviation/wildlife)

U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services. [**www.aphis.gov.usda.gov/ws**](http://www.aphis.gov.usda.gov/ws)

U.S. Department of Defense, U.S. Air Force Bird Aircraft Strike Hazard (BASH) Team. [**www.afsc.saia.af/mil/AFSC/Bash**](http://www.afsc.saia.af/mil/AFSC/Bash)

U.S. Department of Interior, Fish and Wildlife Service. [**www.fws.gov/**](http://www.fws.gov/)

U.S. Department of Transportation, Federal Aviation Administration, Airports Division. **www.faa.gov/arp/**

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GLOSSARY

Air carrier. A person who holds or who is required to hold an air carrier operating certificate issued under 14 CFR 139 while operating air carrier aircraft as defined in 14 CFR 139.

Air carrier aircraft. An aircraft with a specific seating capacity, defined in 14 CFR 139, which is being operated by an air carrier.

Air carrier operation. The takeoff or landing of an air carrier aircraft and includes the period of time from 15 minutes before and until 15 minutes after the takeoff or landing (14 CFR 139.3).

Airport. An area of land or other hard surface, excluding water, that is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any (14 CFR 139.3).

Airport operator. The operator (private or public) or sponsor of a public use airport.

Airport operating certificate. A certificate, issued under 14 CFR 139, for operation of an airport serving air carriers operations.

Approach or departure airspace. The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.

Bird hazard. See **Wildlife hazard**.

Bird strike. See **Wildlife strike**.

Carrying capacity. The maximum number of animals of a given species which a habitat is capable of supporting on a sustained basis. The goal of wildlife management programs at airports is to eliminate or minimize the carrying capacity of habitat for species hazardous to aviation.

Certificate holder. The holder of an airport operating certificate or a limited airport operating certificate, except that as used in subpart D (of 14 CFR 139) "certificate holder" does not mean the holder of a limited airport operating certificate if its airport certification specifications, or this part, do not require compliance with the section in which it is used (14 CFR 139.3).

Concurrent use. Aeronautical property used for compatible non-aviation purposes while at the same time serving the primary purpose for which it was acquired; and the use is clearly beneficial to the airport.

Cover. Vegetation covering a ground surface and serving as shelter for wildlife that are roosting, resting, nesting, or feeding.

Cover types. A descriptive term characterizing vegetative composition and physical characteristics of a plant community.

Dump. The actively used and unvegetated part of an area where refuse is placed and allowed to accumulate on the ground surface without periodic covering or compacting. This includes both authorized and unauthorized areas.

Edge (ecotone). The border where 2 cover types meet. These transition zones usually provide more diverse vegetation and physical habitat characteristics, which may contribute to increased wildlife species diversity and numbers.

Fly ash. The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.

Hazardous wildlife. Species of wildlife (birds, mammals, reptiles), including feral animals and domesticated animals not under control, that are associated with aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a strike hazard (Advisory Circular 150/5200-33 – *Hazardous Wildlife Attractants on or Near Airports*; 14 CFR 139.3)

Heliport. An airport or an area of an airport used or intended to be used for the landing and takeoff of helicopters (14 CFR 139.3).

Landfill. An area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile. See also Municipal Solid Waste Landfill (40 CFR 257.2).

Mammal strike. See **Wildlife strike**.

Migratory Bird. “[A] migratory bird [is] ... any bird whatever its origin and whether or not raised in captivity, which belongs to a species listed in Section 10.13 [of 50 CFR] or which is a mutation or a hybrid of any such species, including any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consist, or is composed in whole or part, of any such bird, or any part, nest, or egg there of.” (50 CFR 10.12). This list includes almost all native bird species in the United States, with the exception of nonmigratory game birds such as pheasants, turkeys and grouse. Exotic and feral species such as mute swans, graylag geese, muscovy ducks, European starlings, house (English) sparrows, and rock doves (pigeons) also are not listed in 50 CFR 10.13 and are therefore not protected by federal law.

Migration. The periodic movement of a wildlife species from one geographic area to another, usually in correlation with seasonal changes in weather.

Municipal Solid Waste Landfill (MSWLF). A discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile. A MSWLF unit also may receive other type of Resource Conservation Recovery Act Subtitle D industrial solid waste. Such a landfill may be publicly or privately owned. An MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion (40 CFR 257.2).

Movement area. The runways, taxiways, and other areas of an airport which are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and aircraft parking areas (14 CFR 139.3).

Pesticide. (1) Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, (2) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant, and (3) any nitrogen stabilizer (7 U.S.C.A. 136[u]).

Piston-use airport. Any airport that would primarily serve fixed-wing, piston-powered aircraft. Incidental use of the airport by turbine-powered, fixed-wing aircraft would not affect this designation. However, such aircraft should not be based at the airport.

Public-use airport. Any publicly owned airport or a privately owned airport used or intended to be used for public purposes.

Putrescible waste. Rotting organic material.

Putrescible-waste disposal operation. Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.

Propane cannon/exploder. A hollow cylinder that produces a loud explosion to frighten wildlife by the ignition of a metered amount of propane at timed or random intervals.

Pyrotechnics. Various combustible projectiles launched from shotgun, pistol or other device that produce noise, light and smoke to frighten wildlife.

Runway protection zone (RPZ). An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the airport design, aircraft, type of operation, and visibility minimum.

Sewage sludge. The de-watered effluent resulting from secondary or tertiary treatment of municipal sewage and/or industrial wastes, including sewage sludge as referenced in USEPA's *Effluent Guidelines and Standards*, 40 CFR Part 401.

Shoulder. An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface, support for aircraft running off the pavement, enhanced drainage, and blast protection (see AC 150/5300-13).

Take (of wildlife). To pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect any wild animal (50 CFR 10.12).

Turbine-powered aircraft. Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft, rotary-wing aircraft.

Turbine-use airport. Any airport that routinely serves fixed-wing, turbine-powered aircraft.

Wastewater treatment facility. Any devices or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including Publicly Owned Treatment Works (POTW), as defined by Section 212 of the Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-576) and the Water Quality Act of 1937 (P.L. 100-4). This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW (40 CFR 403.3 [o], [p], [q]).

Wildlife. Any wild animal, including all wild mammals, birds, reptiles, amphibians, and fish ... (50 CFR 10.3). As used in this manual, wildlife also includes feral animals and domestic animals while out of the control of their owners (14 CFR 139.3).

Wildlife attractants. Any human-made structure, land-use practice, or human-made or natural geographic feature which can attract or sustain hazardous wildlife within the landing or departure airspace, aircraft movement area, loading ramps, or aircraft parking areas of an airport. These attractants can include but are not limited to architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquacultural activities, surface mining, or wetlands (AC 150/5200-33).

Wildlife hazard. A potential for a damaging aircraft collision with wildlife on or near an airport (14 CFR 139.3).

Wildlife strike. A wildlife strike is deemed to have occurred when:

1. A pilot reports striking 1 or more birds or other wildlife;
2. Aircraft maintenance personnel identify aircraft damage as having been caused by a wildlife strike;
3. Personnel on the ground report seeing an aircraft strike 1 or more birds or other wildlife;
4. Bird or other wildlife remains, whether in whole or in part, are found within 200 feet of a runway centerline, unless another reason for the animal's death is identified;
5. The animal's presence on the airport had a significant negative effect on a flight (i.e., aborted takeoff, aborted landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal) (Transport Canada, Airports Group, *Wildlife Control Procedures Manual*, Technical Publication 11500E, 1994).

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ACRONYMS

AAAE	American Association of Airport Executives
AAWV	American Association of Wildlife Veterinarians
AC	Advisory Circular
A-C	Alpha-Chloralose
ADC	Animal Damage Control (former name of USDA/WS)
AGL	Above Ground Level
AMA	Aircraft Movement Area
APHIS	Animal and Plant Health Inspection Service
AOA	Aircraft Operating Area
ATC	Air Traffic Control
BASH	Bird Aircraft Strike Hazard (USAF)
BSCC	Bird Strike Committee Canada
BSC-USA	Bird Strike Committee USA
C&D Landfills	Construction and Demolition Landfills
CFR	Code of Federal Regulations
COE	United States Army Corps of Engineers
DOD	United States Department of Defense
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FOD	Foreign Object Debris, Foreign Object Damage
FSS	Flight Service Station
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MSWLF	Municipal Solid Waste Landfill
NWRC	National Wildlife Research Center (USDA)
OFA	Object Free Area
OFZ	Obstacle Free Zone
RPZ	Runway Protection Zone
TSS	Threshold Siting Surface

USAF	United States Air Force
USDA/WS	United States Department of Agriculture, Wildlife Services
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WCP	Wildlife Control Personnel
WHWG	Wildlife Hazard Working Group
WS	Wildlife Services (USDA)